

Claims:

1. A process for preparing trichlorosilan (HSiCl_3) by catalytic hydrodehalogenation of silicon tetrachloride (SiCl_4) in the presence of hydrogen, in which at least one
5 metal or metal salt selected from among the elements of main group 2 of the Periodic Table of the Elements is used as catalyst at a temperature in the range from 300 to 1 000°C.
2. The process as claimed in claim 1,
10 wherein
calcium, strontium, barium, calcium chloride, strontium chloride, barium chloride or a mixture of at least two of the abovementioned components is used as catalyst.
3. The process as claimed in claim 1 or 2,
15 wherein
a supported catalyst is used.
4. The process as claimed in any of claims 1 to 3,
wherein
20 a catalyst which has been applied to a support selected from the group consisting of low-aluminum zeolites, leached glass, fused silica, activated carbon, porous siliceous supports or SiO_2 supports is used.
5. The process as claimed in any of claims 1 to 4,
25 wherein
the supported catalyst used has a catalyst content, calculated as element, of from 0.1 to 10% by weight.
6. The process as claimed in any of claims 1 to 5,

wherein

an SiCl_4/H_2 mixture having a molar ratio of from 1:0.9 to 1:20 is brought into contact with the catalyst.

- 5 7. The process as claimed in any of claims 1 to 6,
 wherein
 the reaction is carried out in a fixed-bed reactor, in a fluidized-bed reactor or in a
 moving-bed reactor.
- 10 8. The process as claimed in any of claims 1 to 7,
 wherein
 the catalytic reaction is carried out at a temperature in the range from 600 to
 950°C and a pressure of from 0.1 to 100 bar abs.
- 15 9. The process as claimed in any of claims 1 to 8,
 wherein
 the reaction is carried out at a space velocity of from 2 000 to 30 000 h^{-1} and the
 gas stream has a linear velocity of from 0.01 to 10 m/s in the reactor.
- 20 10. The process as claimed in any of claims 1 to 9,
 wherein
 HSiCl_3 is isolated from the product mixture or the product mixture is used further
 directly.